

## 11

terminals 24 and 25 of the fifth deck are connected by jumper 105 to provide additional time for the sheet to be advanced and the pointer band to be returned.

If the pupil wants to cut off the audio messages to do a so-called silent reading of the programmed material, the voice switch 106 is thrown to the left to remove the normal ground 107 from the speaker 43, as in the first embodiment. This will supply power to a lamp 108 when the relay K<sub>10</sub> is operated—which is the condition reached when the machine is waiting for the pupil to touch the activated character segment. The lamp 108 is activated from the plus terminal of rectifier 62 via pole 3 of switch 106, pole 1 lower contact of relay K<sub>19</sub> and pole 1 of relay K<sub>10</sub> to ground 90. The lamp 108 lights a "voice" segment 109 exposed to the pupil which may be for example located on the cover glass as in the first embodiment. If the pupil wants to hear the next audio message he touches the selector pencil 86 to the voice segment 109 which applies ground through pole 2 of switch 106 to relay K<sub>20</sub> and through poles 2 and 1 of switch 106 to the speaker 43. The relay K<sub>20</sub> is operated from plus terminal 110 to apply ground 89 to the relay and speaker until both the relay K<sub>19</sub> is operated (at the end of the audio message) and relay K<sub>12</sub> is operated by the stepper relay coming to a position where there is a code dot 54.

When the condition switch 59 is shifted to its number 3 or "program" position, pole number 1 disconnects the first deck of the stepping relay and connects the pole of the second deck to the transistor Q<sub>1</sub>. The lead line connections of the terminals of deck number 2 to the conductive segments 88 are scrambled so that when the stepper relay is advanced step-by-step the segments will be selected in a predetermined sequence jumping back and forth to different items in the working line according to the particular programming. The deck 3 of the stepping relay again operates the same as before. Deck number 4 is likewise connected the same as before by reason of a jumper 111 between terminals 2 and 3 of pole 2 of condition switch 59. Pole number 3 of the condition switch 59 in moving from position 2 to position 3 disconnects the 115 volt A.C. voltage source so that this source is no longer available either to the pointer band motor 91 or the clutch solenoid 93. This is done so as to disable the pointer band when the teaching machine is conditioned to select the successive items on a scrambled basis.

The embodiments of my invention herein particularly shown and described are intended to be illustrative and not necessarily limitative of my invention since the same are subject to changes and modifications without departure from the scope of my invention, which I endeavor to express according to the following claims.

I claim:

1. In a teaching machine: the combination of a window having a cover glass, means for exhibiting items of information through said window, transparent conductive surface areas on said cover glass predeterminedly located relative to the items to be exhibited, a manual selector device of a pencil-like form having a conductive tip and adapted to be held in the hand by the pupil and to be pointed to said respective items in touching contact with said respective conductive areas to select the respective items of information, means in said machine for responding to selection of said successive items, and circuit means including said manual selector device and respective conductive surface areas for causing said responding means to be successively operated as said items are successively selected.

2. The teaching machine set forth in claim 1 wherein said responding means comprises a reproducing machine including a record medium prerecorded with individual messages for pronouncing and/or making statements relating to said successive items, means for starting said reproducing machine responsive to the pupil's selection of said successive items, and means for stopping said repro-

## 12

ducing machine automatically at the end of each prerecorded message.

3. The teaching machine set forth in claim 1 wherein said responding means comprises a pointer means successively activatable to indicate said successive items, and means for successively activating said pointer means responsive to the pupil's selection of said successive items.

4. The teaching machine set forth in claim 1 comprising a coding means including a stepping code relay for requiring said items to be selected in a predetermined sequence to produce successive activations of said responding means.

5. The teaching machine set forth in claim 4 including an exhibitor means for presenting successive lines of items of information in a working line position within said window, said cover glass having said conductive surface areas for the respective items in said working line, separate lead line connections from said code switch to said respective surface areas for activating the surface areas in a sequence determined by said line connections, and means to start said responding means when an activated surface area is touched conductively by said manual selector device.

6. The teaching machine set forth in claim 4 including a sheet having successive lines of said items of information thereon, means for shifting said sheet to bring respective lines of said items in a working line position, said cover glass having said individual conductive surface areas only for the respective items in said working line, and wherein said stepping code relay is of the self-running type having a stop circuit for each item in said working line position, said sheet having code marks thereon for each line for closing only selected stop circuits whereby to cause said stepping relay to stop only at selected items in the working line, separate lead line connections between said stepping relay and said conductive surface areas for activating the surface areas corresponding to the positioning of said stepping relay when the relay is stopped, and means operative when an activated surface is touched by said selector device for starting said responding means and for restarting said stepping relay when the responding means is stopped.

7. The teaching machine set forth in claim 6 wherein said code marks are dots of conductive material on the back side of said sheet and wherein said stop circuits have respective pairs of switch contacts engaging said sheet for registration with said respective dots.

8. In a teaching machine: the combination of means for exhibiting items of information at intervals along a given line, a manual pencil-like selector device to be held by the hand of the pupil, a reproducing machine having a record medium bearing successive prerecorded messages to pronounce and/or make statements relating to respective items in said line selected in a prescribed sequence, a coding means including a recycling stepping relay having at least as many switch positions in a cycle as the number of items in said line, means in said machine for advancing said stepping relay by steps as the tip of said selector device is placed at said respective items in said sequence, means controlled by said stepping relay for producing successive activations of said reproducing machine in correspondence with the pupil's selection of said respective items, a sheet bearing said items of information wherein said stepping relay is of the self-running type having a stop circuit for each position of the relay effective when the stop circuit is closed to stop the relay, and wherein said coding means includes a pair of switch contacts in each stop circuit engaging the underside of said sheet, conductive code marks on said sheet only at selected positions where it is desired to close the respective stop circuit, and means to cause the activating means for said reproducing machine to be rendered operative when said stepping relay is stopped and the pupil places the tip of said selector device at the item corresponding to the position in which said relay is stopped.